

BASF Aktiengesellschaft

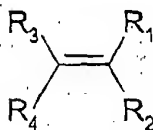
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We claim:

1. A process for preparing a reaction product (RP) functionalized by groups containing
10 halogen or sulfonyl chloride by reaction of the following components under free-radical conditions:

- a) at least one free-radically polymerizable monomer as component (A),
- b) at least one compound of the formula (I) as component (B)



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where R_1 to R_4 are each, independently of one another, hydrogen, an in each case
unsubstituted or substituted alkyl radical, cycloalkyl radical or an aralkyl radical or
an unsubstituted or substituted aromatic hydrocarbon radical, with the proviso that
20 at least two of the radicals R_1 to R_4 are unsubstituted or substituted aromatic
hydrocarbon radicals or the radicals R_1 and R_2 or R_3 and R_4 in each case in pairs are
a substituted or unsubstituted aromatic hydrocarbon having from 6 to 18 carbon
atoms and bearing a functional group which has a multiple bond between a carbon
atom and a heteroatom which is conjugated with the C-C double bond in the
25 formula (I),

- c) at least one free-radical initiator as component (C),
- d) at least one free-radically polymerizable monomer containing halogen or
sulfonyl chloride groups as component (D).

- 30 2. A process as claimed in claim 1, which comprises the following steps:

- (i) reaction of the components (A), (B) and (C) under free-radical conditions to
form a reaction product (RP');;

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- (ii) reaction of the reaction product (RP') with the component (D) and, if desired, further free-radically polymerizable monomers (component (A)) which are different from the free-radically polymerizable monomers used in step (i).

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3. A process as claimed in claim 1, wherein the components (A) to (D) are reacted in one step.

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4. A process as claimed in any of claims 1 to 3, wherein at least one free-radically polymerizable monomer selected from the group consisting of styrene, acrylic and methacrylic acid, C₁-C₁₀-alkyl and -hydroxyalkyl acrylate and -methacrylates, preferably methyl methacrylate; vinyl acetate, substituted or unsubstituted vinylpyrrolidone and mixtures of two or more of the monomers mentioned is used as component (A).

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5. A process as claimed in any of claims 1 to 4, wherein at least one compound selected from the group consisting of 1,1-diphenylethylene, alkoxydiphenylethylene, 1,1-dinaphthylethylene, 4,4-vinylidenebis(N,N'-dimethylaniline), 4,4-vinylidenebis(1-aminobenzene), cis-stilbene, trans-stilbene, methyl α -phenylacrylate, methyl α -phenylmethacrylate, α -phenylacrylonitrile, α -phenylmethacrylonitrile and mixtures of two or more thereof is used as component (B).

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6. A process as claimed in any of claims 1 to 5, wherein 4-chloromethylstyrene is used as component (D).

7. A reaction product (RP) functionalized by groups containing halogen or sulfonyl chloride which can be prepared by a process as claimed in any of claims 1 to 6.

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8. The use of a reaction product (RP) as claimed in claim 7 as macroinitiator for the preparation of graft copolymers.

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9. A process for preparing graft copolymers by reaction of a reaction product (RP) as claimed in claim 7 with at least one suitable monomer as component E.

10. A process as claimed in claim 9, wherein the reaction is a cationic polymerization.

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11. A process as claimed in claim 9 or 10, wherein the monomers (E) are selected from the group consisting of olefins, preferably isobutene or mixtures of isobutene with α -olefins, and cyclic ethers, preferably tetrahydrofuran (THF), dioxolane (DXL) and 1,4-dioxane.
- 5 12. A process as claimed in any of claims 9 to 11, wherein Lewis acids such as boron trifluoride, alkylaluminum chlorides such as diethylaluminum chloride, aluminum alkyls such as triethylaluminum or trimethylaluminum, titanium halides such as TiCl_4 or silver perchlorate are used as coinitiator.
- 10 13. A graft copolymer which can be prepared by a process as claimed in any of claims 9 to 12.
- 15 14. The use of graft copolymers as claimed in claim 13 as phase compatibilizer, e.g. in polymer mixtures, as adhesion promoter, for hydrophilicizing surfaces, as binder for paint and varnish compositions, in coating compositions and in laundry detergents and cleaners.